WHAT IS CLAIMED IS:

1. A heat exchanger provided with a plurality of flat tubes forming passages for a first fluid inside them and having outside surfaces formed to a wave shape so that passages for a second fluid flowing at the outsides of said flat tubes meander in a wave shape and plate-shaped fins for guiding the second fluid at the outsides of said flat tubes forming the passages for the second fluid.

2. A heat exchanger as set forth in claim 1, wherein said flat tubes are fabricated by bending corrugated sheets to tubular shapes and joining their seams.

3. A heat exchanger as set forth in claim 1, wherein said flat tubes are formed by joining pairs of corrugated sheets.

4. A heat exchanger as set forth in claim 1, wherein said flat tubes are provided with reinforcing plates at their insides.

5. A heat exchanger as set forth in claim 1, wherein said flat tubes are fabricated by extrusion so that passages for a first fluid are formed inside.

6. A heat exchanger as set forth in claim 1, wherein a longitudinal direction of said plate-shaped fins is substantially vertical to a longitudinal direction of said flat tubes.

7. A heat exchanger as set forth in claim 6, wherein said plate-shaped fins are bent back at the ends in their longitudinal directions.

8. A heat exchanger as set forth in claim 6, wherein a plurality of said plate-shaped fins form a fin assembly by being connected through leg parts like a multilevel shelf.

9. A heat exchanger as set forth in claim 1, wherein said fins are bonded to the tops or bottoms of wave-shaped surfaces formed at the outside surfaces of said flat tubes.

10. A heat exchanger as set forth in claim 8, wherein said leg parts of said fin assembly are bonded to the tops or bottoms of wave-shaped surfaces formed at the outside surfaces of said flat tubes and windows for passing the second fluid are formed by said leg parts.